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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/689,228	10/11/2000	Craig H. Barratt	015685.P019C	2662

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EXAMINER
GESESSE, TILAHUN

ART UNIT	PAPER NUMBER
2685	

DATE MAILED: 06/05/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/689,228	BARRATT ET AL.	
	Examiner	Art Unit	
	Tilahun B Gesesse	2683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 March 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-94* is/are pending in the application.

4a) Of the above claim(s) *1-39* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *40-48,50-54,57-87,89-91 and 94* is/are rejected.

7)☒ Claim(s) *49,55,56,72,88,92 and 93* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Status of claims

1. Claims 1-39 have been canceled and claims 40-94 are pending in the application.

Claim Rejections - 35 USC § 1033.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 40-41,44-46,50-51,53-54,57-64,68-69,78-82,84-86 and 94 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parish et al (6,037,898) in view of Sato et al (us 5,745,858).

As to claims 40-41,57-58,60,78,80-82,94 Parish et al disclose a method comprising: Parish et al developing a plurality signal processing procedure of a set of different signal processing procedures (in the transmit electronics (113) plurality of signal proc.(119) fig.1), each of the signal processing procedures being for processing the downlink signal to form a plurality of processed downlink antenna signals, (col. 7 lines 10-30 and fig.1). Parish et al disclose iteratively processing a signal through each of the plurality of developed signal processing procedures (119) to generate a plurality of processed signals, (col.8 lines 37-44 and fig.1). Parish et al disclose transmitting the downlink signal by passing each processed downlink antenna signal of the particular plurality of processed downlink antenna signals to its intended antenna element through the intended antenna element's associated transmit apparatus, see col.8 lines 50-64. Parish et al disclose sequentially transmitted through a coupled antennas (col.3 lines 45-53).

Parish et al, however, fail to disclose generate a desirable radiation level at number of location in a desired sector. Sato et al disclose a base station transmitter with plurality of antennas and signal processing circuit is connected to the antennas and antennas are oriented in each sector and radiated radio transmission signals, see abstract. In view of Sato et al. it would have been obvious to one of ordinary skill in the art at the time of invention was made to modify the designed set of different signal processing procedures, to achieve a desired radiation level at any location in a desired sector during transmitting downlink signal of Parish with teaching of

Sato, so that the transmitting signal radiate to the particular sector increases the signal strength and minimizes interference into the signal.

As to claims 44-46,50-51,53,68-69,84-86 parish et al disclose selecting a weight vector from sequence of different weight vectors, wherein elements of the weight vectors selectively modify one or more characteristics of transmission of the signal from each antenna in the antenna array (col.2 lines 15-26).

As to claim 54, Parish et la disclose the weight vectors designed for transmission are determined from spatial signature (col.2 lines 37-41).

As to claim 59, Parish et al disclose a storage medium including content (abstract) and a processor element , coupled with the storage medium, to execute at least a subset of he content (calibration factors) (abstract).

As to claim 61,79, Parish et al disclose the processing elements are comprised of one or more of an ASIC, a DSP, FPGA and /or micro-controller (col.10 lines 12-19).

As to claim 62-64, parish et al disclose as explained above and furthermore, parish et al disclose a transceiver , coupled with antenna array and the processors (col.8 lines 21-33).

6. Claims 42-43,47-48,52,65-67,70-71,73-77,87,89-91, are rejected under 35 U.S.C. 103(a) as being unpatentable over Parish et al in view of Sato et al as applied to claims 40-41,60,78 above, and further in view of Dent (us 5,708,971).

As to claim 42, 65, Parish et al in view of Sato et al fail to teach the desired radiation level is a non-null level. Dent, however, teaches the signal processing unit maintains a matrix of phasing and scaling ---non-null entries, see cols 12-13 lines 65-68 and 25-33 respectively. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention

was made to modify Parish et al in view of Sato et al in disclosing non-null , as disclosing by Dent, so that the radiation level has certain value in the degree as being radiate to the desired sector.

As to claims 43,52,66-67,73-75,83, Parish et al in view of Sato et al disclose everything as explained above except the desired sector range of azimuths. However, Dent discloses antennas could be more or less densely provided or could have a more or less restricted azimuth so that more or fewer than three antennas could receive significant signal components from the source, see col. 13 lines 26-28. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to modify Parish et al in view of Sato et al in disclosing less restricted azimuth, as disclosed by Dent , so that signification signal received, the same applies in the downlink section of the communication device.

As to claims 47-48, 70-71,77,87,89-91, Parish et al in view of Sato et al disclose everything as explained above except orthogonal. However, Dent disclose phasing and scaling table is provided for each of the two orthogonal polarizations, (col.13 lines 34-41). And Dent also disclose the magnitude as shown in the table "scaling" (col. 13 lines 1-25. It would have been obvious to one of ordinary skill in the art at the time of invention was made to modify Parish et al in view of Sato et al the weight vectors are orthogonal and scaling "magnitude" , as disclosed by Dent, in order to prevent from interfering each other radiated signals.

Allowable Subject Matter

7. Claims 49,55-56,72,88,92-93 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

8. Applicant's arguments with respect to prior art have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. ***Any response to this action should be mailed to:***

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314, (for formal communications intended for entry)

Or:

(703) 746-6042 (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tilahun Gesesse whose telephone number is (703) 308-5873.. The examiner can normally be reached on Monday-Friday from 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward F. Urban, can be reached on (703) 305-4385. The fax phone number for this Group is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-4750.

TBG

May 30, 2002

Tilahun Gesesse
Patent Examiner
Art Unit 2685

EDWARD F. URBAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600